

**Amendments to the Drawing Figures:**

The attached drawing sheet includes proposed changes to FIG. 2 and replaces the original sheet including FIG. 2.

Attachment: Replacement Sheet

### **REMARKS/DISCUSSION OF ISSUES**

By this Amendment, Applicants: amend the specification and FIG. 2; amend claims 2-11; and add claims 12-13.

Claims 1-13 are pending in the application.

Applicants thank the Examiner for acknowledging the claim for priority and receipt of certified copies of all the priority documents.

Claims are amended for non-statutory reasons, to replace European-style claim phraseology with American-style claim language, and for clarification.

New claims are added to at least partially restore the original range of claims that existed before multiple dependencies were removed in the preliminary amendment. No new matter is added.

### **OBJECTION TO THE DRAWINGS**

FIG. 2 has been amended to explicitly show a normalizing circuit 78, as originally described in the specification at page 7, lines 13-21. No new matter is added.

Accordingly, Applicants respectfully request that the objection to the drawings be withdrawn.

### **CLAIM OBJECTIONS**

The Office Action objects to claims 7 and 8 due to the presence of certain phrases which supposedly lacked antecedent basis.

Claims 6-8 have been amended for clarification, and it is submitted that all terms in the amended claims have proper antecedent basis.

Accordingly, Applicants respectfully request that the objection to the claims be withdrawn.

### **35 U.S.C. § 112**

The Office Action rejects claims 4, 5 and 7-10 under 35 U.S.C. § 112, second paragraph as supposedly being indefinite.

Applicants respectfully submit that all of the claims 4, 5 and 7-10 are patentable under 35 U.S.C. § 112, second paragraph.

Regarding claim 4, Applicants respectfully submit that the terms "substantial" and "substantially" are well-accepted within U.S. patent claim practice and well-understood by those skilled in the art, and that literally thousands and thousands of U.S. patents are issued with some claim language. Indeed, similar language is also found in claims 2, 3, 9 and 111, and in none of these cases has a rejection under 35 U.S.C. § 112, second paragraph been presented.

Therefore, Applicants respectfully submit that claim 4 fully complies with 35 U.S.C. § 112, second paragraph.

Regarding claim 7, the term "in the vicinity of" no longer appears in the claim as amended, and the claim also does not refer to "the number of stages." However, claim 6 has been amended to define the oversampling ratio as  $N$ , and Applicants submit that indeed, as recited in claims 6 and 7, the number of stages should be at least  $3N/2-1$ , as described in the specification [e.g.,  $N = 20 \rightarrow (3N/2 - 1) = 29$ ].

Accordingly, for at least these reasons, Applicants respectfully request that the rejections of claims 4, 5 and 7-10 are patentable under 35 U.S.C. § 112, second paragraph be withdrawn.

### **35 U.S.C. § 103**

The Office Action rejects: claims 1-3, 6, 7 and 11 under 35 U.S.C. § 103 over Turner U.S. Patent 5,561,687 ("Turner") in view of "Wang et al. (U.S. Pat. No. 5489762; hereafter 'Wang')" (hereafter referred to as "the 762 Patent"); and further in view of Horvat et al. U.S. Patent 6,914,946 ("Horvat"); claim 4 under 35 U.S.C. § 103 over Turner in view of the '762 Patent, in further view of Horvat and further in view of Wagner U.S. Patent 4,291,286 ("Wagner"); and claim 5 under 35 U.S.C. § 103 over Turner in view of the '762 Patent, in further view of Horvat and further in view of Cheng et al. U.S. Patent 5,400,368 ("Cheng").

Applicants respectfully traverse these rejections for at least the following reasons.

Claim 1

Among other things, the method of claim 1 includes determining the values of data bits from a demodulated frequency shift key (FSK) signal, comprising over-sampling raw data recovered from the demodulated FSK signal.

The Office Action admits that Turner does not disclose determining the values of data bits from a demodulated FSK signal, comprising over-sampling raw data recovered from the demodulated FSK signal.

However, the Office Action asserts that "Wang" discloses a "*strictly analogous slicer/receiver which receives FSK signals . . . .*"

Applicants respectfully submit that the only reference identified anywhere in the Office Action as supposedly corresponding to "Wang" is the '762 Patent, which is actually issued in the names of Martin et al. Furthermore, no patent to "Wang" is listed anywhere in the "List of References Cited by the Examiner." However, the "List of References Cited by the Examiner" does include Martin et al. U.S. Patent 5,489,762, which is the same patent number that the Office Action attributes to "Wang." Applicants can only conclude that the Examiner means to state "Martin" instead of "Wang." Meanwhile, the '762 Patent to Martin is directed to a thermal protector for appliances that have resistive heating elements. The '762 Patent does not disclose anything about FSK signals, and so it cannot the admitted defects of Turner.

Furthermore, in any event Applicants respectfully submit that Turner's matched filter employing a decision feedback algorithm for received symbols on for is not even suitable to be modified for determining the values of data bits of a demodulated FSK signal, and also requires the presence of an accurate clock signal for sampler 45, and so cannot be used in a situation where clock recovery is still to be performed..

Accordingly, for at least these reasons, Applicants respectfully submit that claim 1 is patentable over the cited prior art.

Claims 2-3

Claims 2-3 depend from claim 1 and are patentable for at least the reasons

set forth above with respect to claim 1.

Claim 6

The receiver of claim 6 includes a demodulator for demodulating an FSK signal, oversampling the demodulated FSK signal with an oversampling ratio, N, and supplying over-sampled raw data.

As explained above with respect to claim 6: (1) the Office Action admits that Turner does not disclose operating on a demodulated FSK signal; (2) the Office Action alleges that the '762 Patent does disclose this; and (3) it is clear that the '762 Patent does not disclose this.

Accordingly, for at least these reasons, Applicants respectfully submit that claim 6 is patentable over the cited prior art.

Claims 7 and 11

Claims 7 and 11 depend from claim 6 and are patentable for at least the reasons set forth above with respect to claim 6.

Claim 4

Claim 4 depends from claim 1. Applicants respectfully submit that Wagner does not remedy the shortcomings of the cited references with respect to claim 1. Accordingly, Applicants respectfully submit that claim 4 is patentable for at least the reasons set forth above with respect to claim 1.

Claim 5

Claim 5 depends from claim 1. Applicants respectfully submit that Cheng does not remedy the shortcomings of the cited references with respect to claim 1. Accordingly, Applicants respectfully submit that claim 5 is patentable for at least the reasons set forth above with respect to claim 1.

**NEW CLAIMS 12-13**


New claims 12 and 13 depend respectively from claims 1 and 6, respectively, and are deemed patentable for at least the reasons set forth above with respect to claims 1 and 6.

**CONCLUSION**

In view of the foregoing explanations, Applicants respectfully request that the Examiner reconsider and reexamine the present application, allow claims 1-13 and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact Kenneth D. Springer (Reg. No. 39,843) at (571) 283.0720 to discuss these matters.

Respectfully submitted,

VOLENTINE & WHITT

By:   
Kenneth D. Springer  
Registration No. 39,843

VOLENTINE & WHITT  
One Freedom Square  
11951 Freedom Drive, Suite 1260  
Reston, Virginia 20190  
Telephone No.: (571) 283.0724  
Facsimile No.: (571) 283.0740